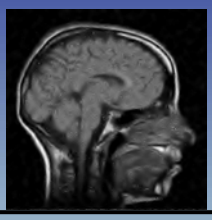
Virginia Stroke Systems



Presented to the:

Joint Commission on Health Care

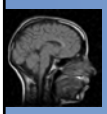
October 17, 2007

Stephen W. Bowman
Senior Staff Attorney/Methodologist

Agenda

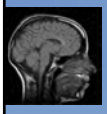
- Overview (HJR 635)
- Stroke and Stroke Systems Information
- Virginia Stroke Systems Strategy Recommendations
- Policy Options

Overview



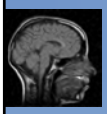
HJR 635

- HJR 635 (O'Bannon) directed JCHC to study and develop strategies that address "stroke prevention and care across the Commonwealth"
- HJR 635 was not passed; however, JCHC agreed to the study



HJR 635

- JCHC was requested to identify and propose solutions to barriers for optimal stroke care, such as:
  - Public awareness initiatives
  - Emergency response protocols
  - Primordial, primary and secondary prevention of stroke
  - Rehabilitation of stroke patients
  - Continuous quality improvement initiatives, and
  - Availability of public support to treat indigent and uninsured stroke victims



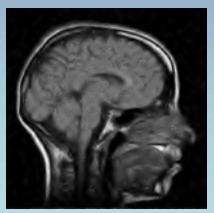
Stroke Systems Workgroup Membership

- Neurologist
- Neuroradiologist
- Physician - emergency care
- Physician - general practice
- Licensed nurse
- Pharmacologist
- Administrator - small rural hospital
- Administrator - primary stroke center
- Administrator - accredited stroke rehabilitation facility
- Stroke survivor
- Stroke caregiver

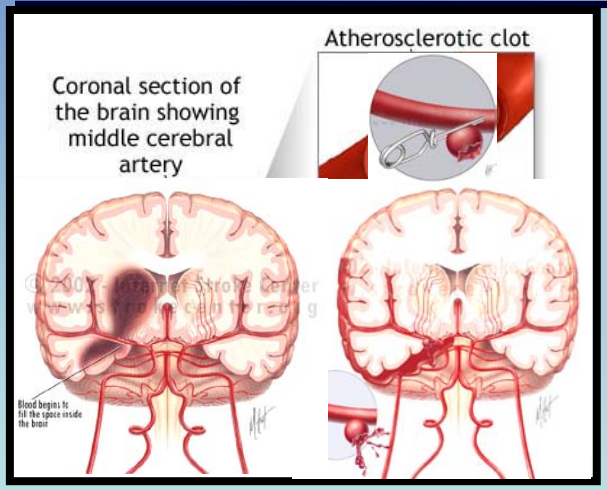
Representatives from:

- Virginia Department of Health - Division of Chronic Disease Prevention
- American Stroke Association
- Medical Society of Virginia
- VCU Center on Health Disparities
- Virginia Hospital & Healthcare Association

Stroke and Stroke Systems Information

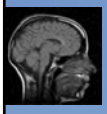


What is a Stroke?



- Loss of brain functions caused by a:
  - **loss of blood circulation, or**
  - **rupture of a vessel.**
- Blood leak (hemorrhage) occurs inside the brain or surrounding the brain

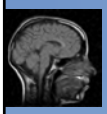
Graphic Sources - Skull and brain - http://www-stat.stanford.edu/~jstarck/brain.html
–Brain and clot - http://www.strokecenter.org/patients/ich.htm



Stroke Symptoms

1. Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
2. Sudden confusion, trouble speaking or understanding
3. Sudden trouble seeing in one or both eyes
4. Sudden trouble walking, dizziness, loss of balance or coordination
5. Sudden, severe headache with no known cause

Source: American Heart Association website: http://www.americanheart.org/presenter.jhtml?identifier=4742 Last accessed 9/6/07

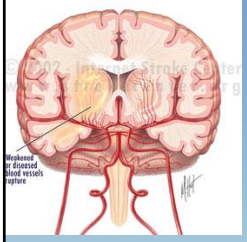


Important Stroke Facts

- Only 17% of Americans can accurately identify signs of stroke and recognize the need to call 911 immediately
- Rapid treatment of strokes is critical

Source: American Heart Association: Preventing and Treating Stroke, Legislator Policy Brief

Types of Stroke



- **Hemorrhagic** - occurs when a blood vessel in the brain breaks leaking blood into the brain
- **Ischemic -** occurs when arteries are blocked by blood clots or by the gradual build-up of plaque and other fatty deposits
- **Transient Ischemic Attack (TIA)** - stroke symptoms that always last less than 24 hours before disappearing

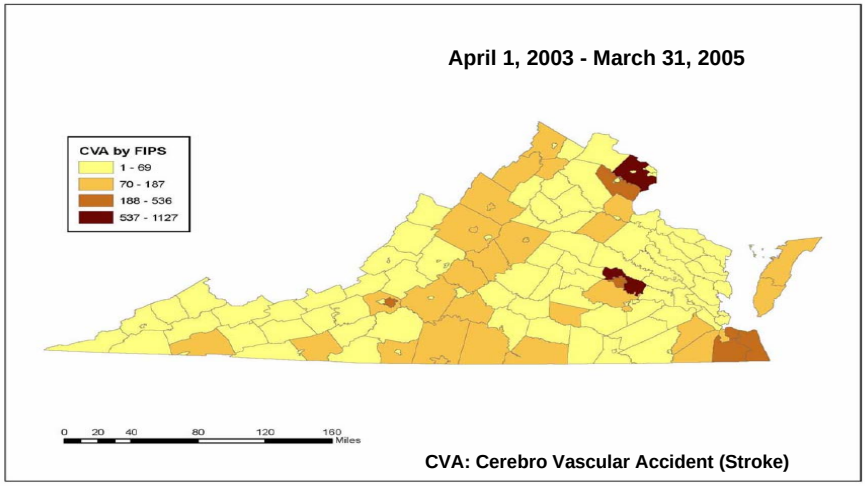
Source: Definitions from National Stroke Association website accessed 8/13/07

Virginia Stroke Statistics

- 20,674 stroke patient discharges from Virginia hospitals in 2006*
  - 2000-06 average is 21,170 strokes*
- 3,681 Virginians died from a stroke (2004)**
- For every 100,000 Virginians, 54 died from a stroke (2004)**
- For every 100,000 Black Virginians, 79 died from a stroke (2004)**

Sources: *Compiled from discharge data provided by Diane Hillman Dr.H.A, ** Virginia Department of Health

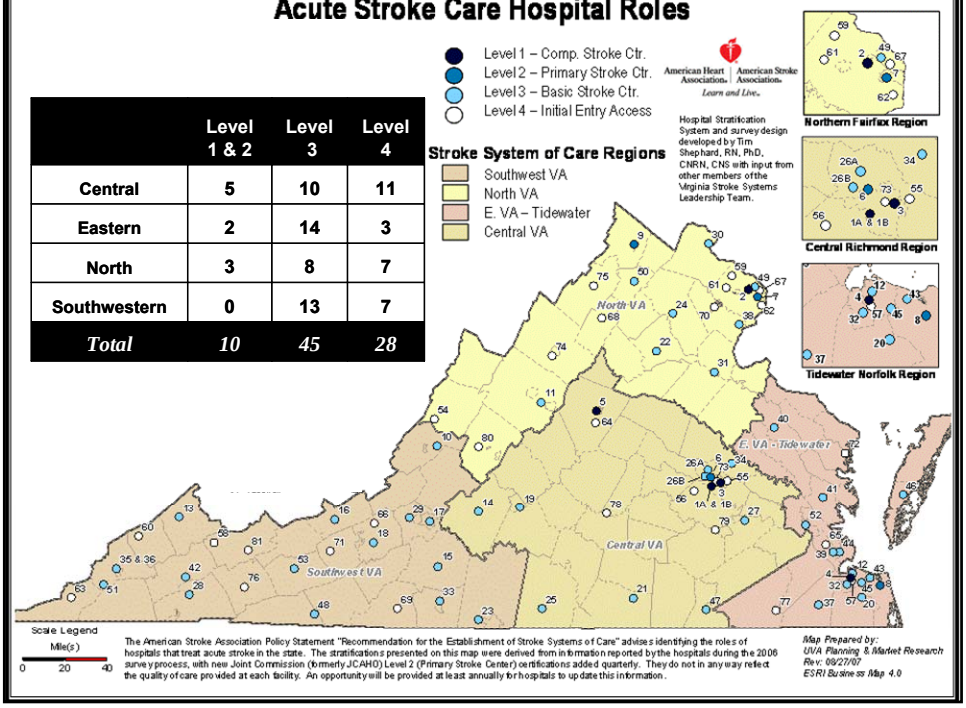
EMS Stroke Patients in Virginia



Source: From Sabina Braithwaite, MD presentation to Stroke Systems Workgroup July 11, 2007

Acute Stroke Care Hospital Roles

	Level 1 & 2	Level 3	Level 4
Central	5	10	11
Eastern	2	14	3
North	3	8	7
Southwestern	0	13	7
Total	*10*	*45*	*28*



Stroke Center Designations

- **Designations are for baseline informational purposes not for accreditation purposes**
  - Only "Primary Stroke Center" designation is complete and refined enough for a hospital accreditation

Levels

1 - Comprehensive Stroke Center (CSC) can provide care for all levels of acute, sub-acute and chronic stroke and stroke related conditions as well as for the most complex stroke patients. No current certification process.

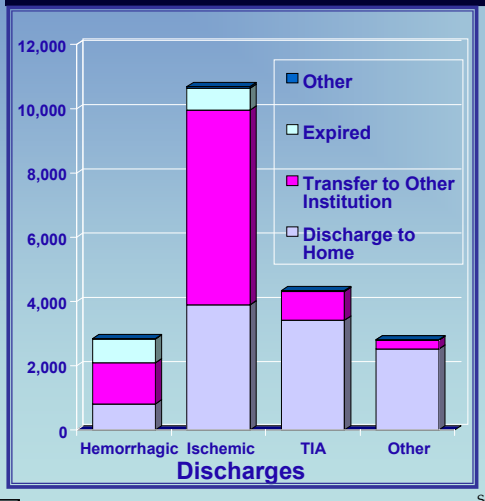
2 - Primary Stroke Center (PSC): Defined by the Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations).

3 - Basic Stroke Care (BSC): Has not become certified PSC but has many of the components of a PSC.

4 - Initial Entry Access (IEA): Typically a smaller institution with a very limited stroke population and/or PSC capability only during weekday working hours. They may treat and transport or elect to transfer hyper-acute strokes and have implemented telemedicine/teleradiology, transfer agreements and pre-planned transfer.

Source: Acute Stroke Care Hospital Roles, American Heart Association

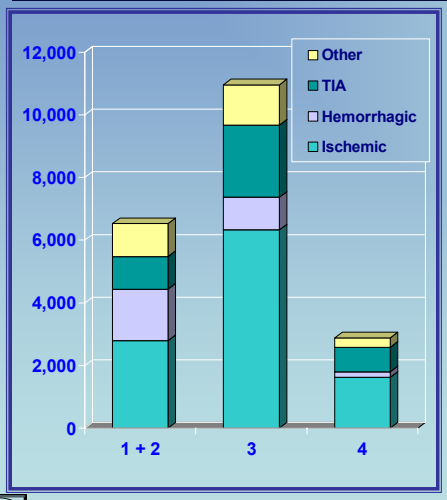
Patient Discharges by Stroke Types for all Virginia Hospitals – CY2006



- Hemorrhagic strokes are the most likely to be fatal
- Ischemic strokes represent the highest level of discharge to other institutions
  - This includes skilled nursing facilities (SNF) and rehabilitation centers

Source: Diane Hillman, Dr.H.A. Presentation to Stroke Systems Workgroup July 11, 2007

FFY05-06 Mix of Stroke Types at Virginia Hospitals



Level 1 and 2
PSCs & CSCs serve a disproportionate percentage of hemorrhagic stroke patients

Level 3
Serves the highest volume of stroke patients

Level 4
Serves the fewest patients

Source: Diane Hillman, Dr.H.A. Presentation to Stroke Systems Workgroup July 11, 2007

Acute Stroke Treatment

- TPA -Tissue Plasminogen Activator*
  - Within 3 hours from known time of onset*
  - Intra-arterial TPA within 6 hours
- MERCI Retriever**
  - Within 8 hours from known time of onset

*FDA-approved – 1996
**FDA-approved for "clot removal"

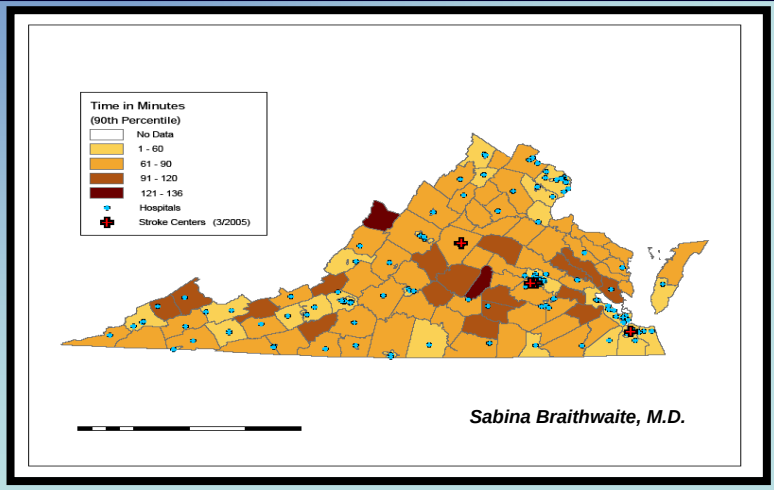
Source: Tim Shephard, PhD (personal communication, 8/17/07)

Acute Stroke Treatment (cont'd)

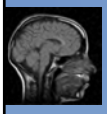
- Other treatments that can reduce brain damage and prevent complications:
  - Blood pressure control
  - Glucose control
  - IV fluids (increase blood flow)
  - Antiplatelet therapy (similar to aspirin for heart attacks)
  - Surgery (i.e. "carotid endarterectomy, CEA")

Sources: Tim Shephard, PhD (personal communication, 8/17/07)
Nina Solenski, M.D. (personal communication, 9/24/07)

Length of Time From 911 Call to Patient's Arriving at Hospital *(90th Percentile)*



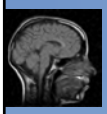
Source: Sabina Braithwaite, M.D. presentation to Stroke Systems Workgroup July 11, 2007



Best Practice for Stroke Protocols

1. Patient (or witness) awareness of symptoms calls 911.
2. EMS dispatched at high priority.
3. EMS arrival, immediate evaluation and transport.
4. EMS verifies time of onset with patient/witness.
   - Secure witness location for questions from medical staff - at home or on phone.
5. EMS performs routine actions such as history, physical evaluation, etc. and:
   - Pre-hospital stroke scale, finger stick for gross blood sugar level (low blood sugar can create symptoms like stroke), thrombolytic screen.
6. EMS pre-notifies receiving emergency department (ED):
   - Possible stroke, time of onset, pre-hospital stroke scale score, blood sugar level, and brief history.

Sources: Tim Shephard, PhD (personal communication, 8/17/07)
Nina Solenski, M.D. (personal communication, 9/24/07)



Best Practice for Stroke Protocols
(Cont'd)

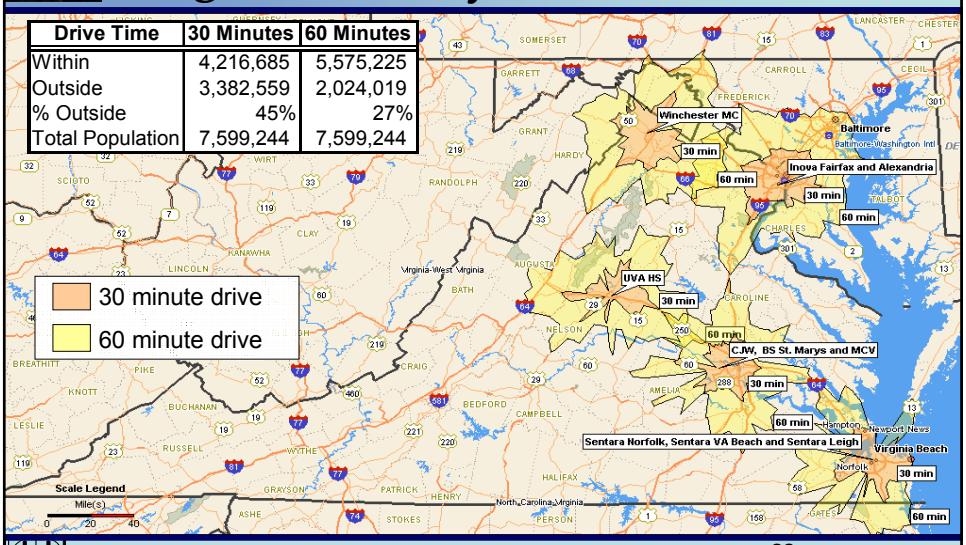
ED Time Goals*

7. ED pre-notified neurology/Acute Stroke Team of incoming stroke.
8. EMS arrival to ED with rapid triage to room and/or directly to CT scanner depending on status/stability.
9. Head CT completed and read.
10. Acute Stroke Team [Neurologist/ED physician] evaluation:
    - Verifies diagnosis of stroke by clinical history
    - Verifies time of onset (determines treatment options)
    - Determines stroke severity (NIHSS stroke scale score)
    - Reviews inclusion/exclusion criteria for treatment with TPA or MERCI clot retrieval.
11. Based on results above, ED MD and/or Neurologist makes treatment decision.

Sources: Tim Shephard, PhD (personal communication, 8/17/07)
Nina Solenski, M.D. (personal communication, 9/24/07)
* Circulation 2005;112:IV-111-IV-120

Drive Times from Virginia Primary Stroke Centers

Drive Time	30 Minutes	60 Minutes
Within	4,216,685	5,575,225
Outside	3,382,559	2,024,019
% Outside	45%	27%
Total Population	7,599,244	7,599,244



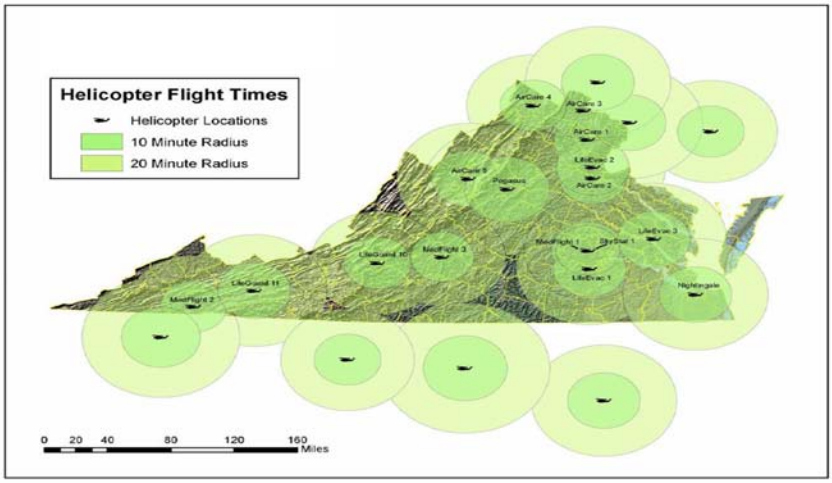
Source: Diane Hillman, Dr.H.A. Presentation to Stroke Systems Workgroup July 11, 2007

Air Ambulances Are Used to Move Patients Quickly

- 16 Air Ambulances are based in Virginia
  - 2 new (NOVA, Virginia Beach)
- 20 Air Ambulances cover some portion of Virginia within 20 minute flight time

Source: Sabina Braithwaite presentation to Stroke Systems Workgroup July 11, 2007

Helicopter Flight Times



Source: Sabina Braithwaite, M.D. presentation to Stroke Systems Workgroup July 11, 2007

Virginia Stroke Systems Strategy Recommendations

A Stroke Systems Workplan Was Created and Approved

Virginia Stroke Systems of Care: Work Plan

This document is based on the ASA Policy Statement, *Recommendations for Establishing Stroke Systems of Care* and represents an assimilation of strategies developed by the Virginia Stroke Systems Leadership Team. After which this was reviewed, amended and approved by the 2007 Joint Commission on Health Care's Stroke Systems Workgroup. It serves not just as a static document but can be changed as the needs and resources of Virginia's Stroke Systems change. This document is to be used as a strategy document to improve Virginia's Stroke Systems of Care by addressing component ratings, resources, and strengths and gaps in care. A table of abbreviations is included as an addendum.

PRIMORDIAL & PRIMARY PREVENTION OF STROKE

STRATEGY A-1: DEVELOP SOCIAL MARKETING STRATEGIES

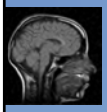
DESCRIPTION: Engage multiple channels in providing community awareness and/or community education about stroke risk factors, signs and symptoms, and urgent response, in addition to information about lifestyle behaviors that lower risk.

PARTNERS
VDH, VA Business Coalition on Health, OEMS, stakeholders, hospital systems

28 Strategy Recommendations for Stroke System Task Force*

- Number of target strategies denoted above each area of care
- Recommendations include: strategy description, partners, tools, resources, accomplishments, next steps, and measures.

•*Some strategies apply to more than one area, therefore the sum of the areas is greater than the total number of approved strategies
•Graphic created by VDH and modified by JCHC staff

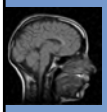


Strategy Recommendation Examples

- Public Awareness:
  - A-2: Engage partners in implementing awareness for high-risk populations
    - Identify existing educational programs and resources and develop strategies to promote and provide access to them.
- Emergency Response Protocols:
  - B-3: Promote the Use of Most Current Recommended Diagnostic Algorithms and Protocols by Emergency Medical Dispatchers
    - Put strategies in place to:
      - Provide for the most advanced level of prehospital care available,
      - Have consistent use of and prompt updating of established standards of response by EMS dispatchers, particularly non-traditional (ie, police, non-EMD).

Strategy Recommendation Examples (Cont'd)

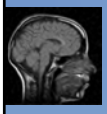
- Primordial, primary and secondary prevention of stroke:
  - A-7: Engage Partners in Providing Professional Education Relevant to Stroke Prevention
    - Encourage and support provision of professional education related to diagnoses and control of risk factors for stroke, in a format with measurable outcomes related to practice change.
- Rehabilitation of stroke patients:
  - E-1: Provide for and Promote Standardized Rehabilitation Screening Early in Treatment
    - Ensure that all stroke patients receive a standard screening evaluation during the initial hospitalization, with emphasis on assessment of all residual impairments.



Strategy Recommendation Examples (Cont'd)

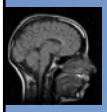
- Continuous quality improvement initiatives:
  - C-1: Improve Quality Of Hospital Care Through Promotion of Primary Stroke Centers (PSCS)
    - Conduct and analyze surveys to determine present levels of care available. Disseminate results and provide support systems to encourage more hospitals to develop enhanced stroke systems of care.
- Availability of public support to treat indigent and uninsured stroke victims:
  - F-2: Document Costs of Indigent and Uninsured Stroke Patients
    - Show the direct and indirect financial costs of theses patients. Request that hospitals, doctors and rehabilitation providers to break out indigent and uninsured stroke patients cost to them.

Policy Options



Policy Options

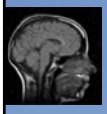
- **Option 1:** Take no action
- **Option 2:** Virginia Department of Health convene a standing **Stroke Systems Task Force** to address improvement in Virginia's Stroke Systems.
  - Quarterly meetings
  - Diverse membership
  - Focus on
    - Stroke systems work plan
    - Topics referred from stroke systems workgroup
    - Other stroke issues/concerns, as necessary
    - Outcome analysis of interventions



Policy Options

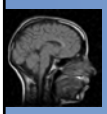
Option 2: Stroke System Task Force Membership

- Neurologist
- Neuroradiologist
- Emergency care physician
- 2 Family practice physicians
- Licensed nurse
- Pharmacologist
- Small rural hospital administrator actively involved in stroke care
- Primary Stroke Center hospital administrator
- Office of Emergency Medical Services representative
- VDH Division of Chronic Disease Prevention representative
- Stroke survivor
- Administrator from an accredited stroke rehabilitation facility
- Stroke caregiver
- American Stroke Association representative
- Virginia Hospital & Healthcare Association representative
- Medical Society of Virginia representative
- VCU Center on Health Disparities representative
- Virginia Association of Health Plans representative
- Physical Medicine and Rehabilitation Physician



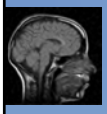
Policy Options

- **Option 3:** Designate certain hospitals as "Primary Stroke Centers"
  - Amend the *Code of Virginia* to grant the Department of Health's Commissioner the authority to designate certain hospitals to be a "Primary Stroke Center" when accredited as a "Primary Stroke Center" by the Joint Commission or similar designation by another equivalent national accrediting body. (Similar to trauma designations)



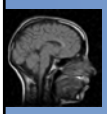
Policy Options

- **Option 4:** Establish hospital guidelines for stroke treatment
  - JCHC support either or both:
    - 4A - Amend the *Code of Virginia* to mandate that all hospitals establish a protocol for the rapid evaluation and subsequent admission or transfer of the stroke patient.
    - 4B - Letter from JCHC chairman to VHHA requesting assistance on encouraging all hospitals to establish a protocol for the rapid evaluation and subsequent admission or transfer of the stroke patient.



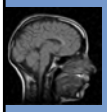
Policy Options

- **Option 5:** EMS regional Councils to develop regional stroke patient destination plans.
  - Amend the *Code of Virginia* to require each regional EMS Council to create a uniform destination plan for prehospital stroke patients, with partners including the Office of Emergency Medical Services (OEMS) and public safety answering points (PSAPS), as well as other organizations as deemed appropriate.



Policy Options

- **Option 6:** VDH briefing on OEMS medical record data collection system in 2008
  - Request by letter of the Chairman that OEMS report to JCHC in 2008 regarding progress in developing a centralized electronic medical record data collection.

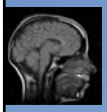


Policy Option

- **Option 7:** Improving care coordination for Medicaid stroke patients
  - Request by letter of the Chairman that Department of Medical Assistance Services (DMAS) investigate the option for care coordination service payments for those who have had a stroke.

Policy Option

- **Option 8:** Expedited Medicaid review for acute stroke patients
  - Request by letter of the Chairman that Department of Social Services (DSS) and DMAS investigate an expedited Medicaid determination review for acute stroke patients.



Public Comments

- Written public comments on the proposed options may be submitted to JCHC by close of business on October 31, 2007. Comments may be submitted via:
  - E-mail (sareid@leg.state.va.us)
  - Facsimile (804/786-5538) or
  - Mail to Joint Commission on Health Care
    P.O. Box 1322
    Richmond, Virginia 23218
- Comments will be summarized and presented to JCHC during its November 8th meeting.